

16 therein and redirects the bus device packets to a bus device driver running
17 thereon.

REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 1-39 are pending in the application. Claims 1, 19, 21, 22, 32, and 33 have been amended. No claims have been added. No claims have been canceled. Claims 11-12, 30-31 and 38-39 are allowed. Applicant thanks the Examiner for indicating the allowability of these claims. The remaining comments are directed to the non-allowed claims.

Applicant has amended the claims, particularly to overcome the Examiner's rejection of indefiniteness under 35 U.S.C. §112 and to more clearly distinguish the invention from the prior art cited. The Examiner initially rejected claim 21 under 35 U.S.C. §112, second paragraph. Accordingly, Applicant has amended claims 1, 19, 21, 22, 32, and 33 to particularly point out and distinctly claim, in full, clear, concise and exact terms, the subject matter which Applicant regards as his invention.

The Examiner rejected Claims 1-7, 14, 19, and 21 under 35 U.S.C. §102(e) as being anticipated by Batz et al. Applicant reserves the right to swear behind this reference, however the Applicant respectfully submits the present invention as claimed is not anticipated by Batz. The present invention sets forth a tunneling method and apparatus that is different than

the tunneling that is performed in the prior art. The tunneling of the present invention allows the sharing of access to devices in a bus remotely across a network. The tunneling corresponds to bus events, such as, for example, bus transactions and requests for buses, such as, for example, 1384 serial bus and universal serial bus (USB). The tunneling transports bus events that would normally occur on the sending node and recreates the bus events on a remotely located receiving node. Thus, unlike the prior art tunneling, the tunneling described herein is dependant on specific bus dynamic properties such as, for example, those described in the 1384 and USB standards. In this manner the devices may be controlled across the network as if they were attached locally, thereby providing transparency of operation to a user on the host system. As set forth in the claims, the present invention sets forth "an interface...to tunnel bus events over a network between the host and the bus device while preserving one or more local bus properties...(emphasis added). Thus, the present invention tunnels bus events as opposed to data frames while preserving one or more local bus properties.

In contrast, Batz discloses a system having terminal and printer devices that are coupled to an agent set control unit (ASCU). The ASCU interfaces to the network via a branch router. It is this branch router that the Examiner anticipates the interface element set forth in the claims of the present invention. Applicant respectfully disagrees. The communication between the ASCU and the branch router is an exchange of frames defined by a specific protocol. They are not exchanging bus events. In fact, all that is

happening is that the frames merely include airline reservation data. The data frames are encapsulated for transmission over conventional TCP/IP virtual circuit connection in accordance with an ATP protocol. The ATP protocol provides an encapsulation arrangement that preserves and maintains frame boundaries, not bus events. Preserving frame boundaries has nothing to do with maintaining the one or more bus properties such that device may be controlled across a network as if they were attached locally. In view of this, Applicant respectfully submits the present invention as claimed is not anticipated by Batz.

The Examiner rejected Claim 20 under 35 U.S.C. §103(a) as being unpatentable over Batz. Applicant respectfully submits for the same reasons given above the present invention as claimed is not obvious in view of Batz.

Examiner rejected Claims 8-10, 13, 15-18, 22-29, and 32-37 under 35 U.S.C. §103(a) as being unpatentable over Batz and Klein. Applicant has amended claim 32 to depend on claim 31. In view of the fact that claim 31 is in condition for allowance, applicant respectfully submits that claim 32 is in condition for allowance. However, with respect to the other claims in this rejection, Applicant respectfully submits for the same reason given above with respect to claim 1-7, 14, 19, and 21 the present invention as claimed is not obvious in view of Batz and Klein.


Accordingly, Applicant respectfully submits that the rejections under 35 U.S.C. §112, 102(e) and 103(a) have been overcome by the amendments and the remarks and withdrawal of these rejections is respectfully requested.

Applicant submits that Claims 1-10, 13-29, and 32-37 as amended are now in condition for allowance and such action is earnestly solicited.

Please charge any shortages and credit any overcharges to our Deposit Account No. 02-2666.

Respectfully submitted,
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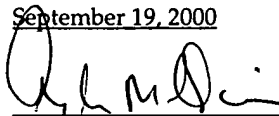
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Angela M. Quinn

August 13, 2001
Date

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1 1. (Amended) A system comprising:
2 a network having a host coupled thereto, the host executing software
3 to generate packets for communication on the network;
4 a bus with a bus device coupled thereto;
5 an interface coupling the network to the bus, the interface and host
6 coordinating to tunnel bus events over the network between the host and
7 the bus device while preserving one or more local bus properties by
8 encapsulating bus events into network protocols, transferring the
9 encapsulated bus events over the network, and subsequently decapsulating
10 the bus events to recreate the bus events.

1 19. (Amended) A method of controlling devices across a network
2 comprising:
3 capturing bus events generated on a bus;
4 encapsulating the captured bus events into packets associated with a
5 network protocol using an interface;
6 decapsulating the capsulated bus event and recreating them at a
7 remote site transparently to a user using information in the header of the

8 packet, the operations of capturing, encapsulating, and decapsulating being
9 performed while preserving one or more local bus properties.

1 21. (Ameneded) An apparatus for controlling devices across a
2 [the] network comprising:
3 means for capturing bus events generated on a bus;
4 means for encapsulating the captured bus events into packets
5 associated with a network protocol using an interface;
6 means for decapsulating the capsulated bus event and recreating
7 them at a remote site transparently to a user using information in the header
8 of the packet, when the means for capturing, the means for encapsulating
9 and the means for decapsulating operate while preserving one or more local
10 bus properties.

1 22. (Amended) A system comprising:
2 an Internet Protocol (IP) Ethernet network having a host coupled
3 thereto, the host executing software to generate packets for communication
4 on the network;

5 a serial bus with a bus device coupled thereto, where transfers occur
6 to and from the bus device which adhere to the IEEE-1394 bus standard;
7 an interface coupling the network to the bus, the interface and host
8 coordinating to transport bus events between the host and the bus device via
9 tunneling bus events over the network while preserving one or more IEEE-
10 1394 bus properties by capturing and encapsulating the bus events into
11 network protocols and subsequently decapsulating the bus events and
12 recreating them.

1 32. (Amended) The system defined in Claim 31 [22] wherein the
2 interface comprises a remote peripheral server.

1 33. (Amended) A system comprising:
2 an Internet Protocol (IP) Ethernet network having a host coupled
3 thereto, the host executing software to generate packets for communication
4 on the network;
5 a serial bus with a bus device coupled thereto, where transfers occur
6 to and from the bus device which adhere to the USB bus standard;

7 an interface coupling the network to the bus, the interface and host
8 coordinating to transport bus events between the host and the bus device via
9 tunneling bus events over the network while preserving one or more USB
10 bus properties by capturing and encapsulating the bus events into network
11 protocols and subsequently decapsulating the bus events and recreating
12 them.